# Babel Fish Translation

Help

## In English:

Description of FR2793013 -1 Echanqcieur of heat brazed, in particular for motor vehicle The invention refers to the exchangers heat, in particular for motor vehicle. It more particularly relates to an exchanger of heat type including/understanding a beam of flat tubes and interca- laires corrugated, as at least a collecting tubular wall box in which the ends of the tubes emerge. One knows already exchangers of heat of this type which can constitute a condenser for one in particular installed tion of air-conditioning of motor vehicle. Usually, such an exchanger of heat includes/understands two collecting boxes which receive the ends of the tubes, on both sides beam. The connection of the ends of the tubes with the collecting box is generally carried out by the intermediary of a collector which spares a plurality of slits intended to receive them ends of the tubes. It results from it not only the need for envisaging an additional part, namely a collector, for each one of the collecting boxes, but also the need for machining slits through this collector. Moreover, this known solution is possible only for exchangers of heat intended to be traversed by a fluid with low or average pressure, for which the thickness of the collecting box and the collector, if it is present, do not exceed a value of about 1 mm. However, there are exchangers of heat which must be crossed by a fluid with high pressure, being able to reach, for example, of the values of about 500 bars, as it is the case of the exchangers of the eau/dioxyde type of carbon. Such exchangers of heat require, in particular, a collecting box of which the thickness can reach values 3 to 5 Misters But, with such a thickness, it is practical lies impossible to carry out openings in one easily collector, and to assemble this one with a collecting box. Moreover, in the known solutions, the fact of connecting the collecting box to a collector increases the obstruction, especially the obstruction in width, of the exchanger of heat. The purpose of the invention is in particular to surmount the inconvé- nients above mentioned. It aims in particular at

getting an exchanger of heat brazed of the type defined previously, which removes the use of a collector associated with the collecting box. The invention also aims at getting such an exchanger of heat whose each collecting box can be built with a thickness of important wall to resist high pressures of the fluid crossing the exchanger of heat. The invention proposes for this purpose an exchanger of heat of the type defined in introduction, in which the ends of the tubes are twisted each one to 90 and aligned in a longitudinal direction so as to be received in one even longitudinal slit of the collecting box. In other words, the ends of the tubes undergo a twist or a torsion of about 90 compared to the part of tubes which is in contact with the corrugated guides. So the ends of the tubes can be laid out on line and be received in only one longitudinal slit from the collecting box, instead of being received in slits or individual openings as in the former technique. It also results from it that the connection of the ends of the tubes is carried out directly with the collecting box, without to require of recourse to a collector. So it is possible to build the collecting box with a raised thickness, typically about liked sieurs millimetres, since it is not necessary any more to bore a plurality of openings through the wall of the collec- tor as in the former technique. Advantageously, the ends of the tubes are in contact mutual. Preferably, the tubes include/understand each one several parallel channels interior, which makes it possible to increase them pressure resistance. The invention applies in particular to an exchanger of heat in which the tubes have a section delimited by two large sides and two small sides. In this case, the longitudinal slit of the collecting box has a width appreciably equalizes at the small sides of the tubes. According to another characteristic of the invention, this longitudinal slit is delimited between two parallel lips of the tubular wall. Advantageously, these two parallel lips are defined respectively by two turned over edges of the wall tubulai- Re, so that the ends of the tubes are in contact of the same face interns tubular wall. It results from it a better surface contact between the wall tubular and ends of the tubes, improving brazing. According to another characteristic of the invention, limps it collecting includes/understands two walls of ends framing them aligned ends of the tubes. In a first embodiment of the invention, the exchanger of heat includes/understands a beam with only one formed tablecloth of right tubes and two limp

collecting spaced, in which emerge respectively of the first ends and of the second ends of the tubes. In a second embodiment of the invention, the exchanger of heat includes/understands a beam with two tablecloths formed by tubes out of U and two limp collecting rappro- chées in which emerge respectively of the first ends and the second ends of the tubes out of U In a third embodiment of the invention, the exchanger of heat includes/understands a beam with two tablecloths formed by right tubes and four limp collecting, in which the ends of the tubes emerge, namely one limps of entry and one limps of exit laid out adjacen- your at an end from the beam, and two limp intermédiai- LMBO laid out adjacent at another end of the beam and communicating between them. Preferably, the exchanger of heat is obtained by brazing parts based on aluminium. Thus, limps it collecting is advantageously obtained by shaping of a band in a material based on plated aluminium. In a preferential application, the exchanger of heat is realized in the shape of a condenser for one installed tion of air-conditioning. In the description which follows, only made with title of example, one refers to the annexed drawings, on which: - figure 1 is a sight in prospect, with partial wrenching, of an exchanger of heat according to a first embodiment of the invention; - figure 2 is a sight in prospect for a tube suitable to form part of the exchanger of heat of figure 1; - figure 3 is a sight on increased scale of an end of the tube of figure 2; - figure 4 is a sight in prospect for an exchanger for heat according to a second embodiment of the inven- tion; - figure 5 is a sight in prospect for a tube out of U suitable to form part of the exchanger of heat of figure 4; - figure 6 is a sight on increased scale of an end of the tube of figure 5; and - figure 7 is a sight in prospect for an exchanger for heat according to a third embodiment of the inven- tion. The exchanger of heat represented on figure 1 is intended, in the example, to constitute a condenser for one installed tion of air-conditioning of motor vehicle. This exchanger of heat is made of parts based on aluminium which are solidarized between them by brazing. The exchanger includes/understands a formed beam 10 of a multiplicity of flat tubes 12 and corrugated guides 14, still called wings. Each tube 12 (figures 2 and 3) is obtained by extrusion of a material based on aluminium so as to present a cross-section of rectangular form delimited by two large sides 16 and two small sides 18. Each tube includes/understands

interior channels parallel 20 which are with numbers of eight in this example of realization (figure 3). As one can see it on figures 1 and 2, each tube 12 comprises a central part 22, still called body, which is intended to come in contact with the corrugated guides 14 and of the ends 24 and 26 which are twisted from report/ratio with the central part 22. In other words, each end 24 and 26 of a tube underwent a total torsion of 90, so that each one of them has one longitudinal direction L1 (figures 2 and 3) which is perpendi- culaire with the longitudinal direction L2 of the central part 22, as defined by large sides 16. So the ends 24 are aligned in the same longitudinal direction L1 and, in the same way, ends 26 are aligned in the same longitudinal direction LI. Beam 10 includes/understands moreover two cheeks of end 28 which come to frame the wings 14 located more at outside. The exchanger of heat includes/understands moreover two limp collec- trices 30 and 32 having respective tubular walls 34 and 36 (figure 1). In the example, each collecting box is obtained by shaping of a band of a material based on aluminium, plated on its two faces of an alloy of brazing. Limps collecting 30 comprises a longitudinal slit 38 delimited between two definite parallel lips 40 respecti- vement by two turned over edges of the tubular wall 34. Slit 38 has a width which corresponds appreciably to the width of the tubes, as defined by the small ones sides 18. The ends 24 of the tubes are aligned and in mutual contact and are received in the longitudinal slit 38, so that channels 20 emerge all in the interior space of collecting box 30. The latter is closed at its two ends by walls of end 42 which are used of obstinate at the ends 24 tubes. The collecting box 30 is provided with a pipe 44 being used for example for the admission of a fluid which can be a fluid under high pressure, typically which can reach 300 bars for example. Wall 34 must, so to present one great thickness being able to reach for example 5 mm. Owing to the fact that the ends 24 of the tubes are received between two turned over edges 40 of wall 30, these ends are in contact with the same internal face of the wall, which improves the surface contact and consequently the connection of brazing enters the ends of the tubes and wall 34. The collecting box 32 is built in a similar way and it comprises also a longitudinal slit 46 delimited between two parallel lips 50 of the tubular wall 36. The collecting box 32 is closed by two walls of end 52 (of which only one is visible on figure 1). Moreover, it is equipped with a

pipe 54 being used for the exit of fluid crossing the exchanger of heat. It will be understood that the ends of the tubes are received directly in the longitudinal slit of the box collec- trice 30 or 32, so that it is not necessary any more to envisage an additional part (collector) equipped with a plurality of openings suitable to receive the ends of tubes, as in the former technique. It results from them a simplification from manufacture and one small overall dimensions of the exchanger of heat, this techni- that being compatible with the realization of exchangers of heat likely to resist high pressures. In the embodiment of figure 1, the exchanger of heat includes/understands only one formed tablecloth of right tubes whose ends are received in two limp collecting 30 and 32 spaced one of the other, i.e. at the two ends of the beam. One refers now on figures 4 to 6 to describe another embodiment in which the exchanger includes/understands a beam 55 to two tablecloths formed by tubes 56 out of U, still called tubes out of pin. These tubes 56 have two parallel branches 58 connected by an elbow out of U 60 and finished by two ends 24, 26 which are twisted to 90 compared to the respective branches 58, so as to extend in parallel longitudinal directions enters they. Ends 24 and 26 of the tubes are received respec- tivement in two collecting boxes 30 and 32 analogues with those described previously, these limp being laid out adjacent, so that their longitudinal slits respec- tives 38 and 46 are parallel. In the embodiment of figure 7, the exchanger of heat includes/understands a beam 61 to two tablecloths formed by right tubes 12 and four collecting boxes. One finds one limps collecting of entry 30 and one limps collecting of exit 32 laid out adjacent at an end of the beam. Moreover, the exchanger comprises two other boxes collectri- these 62 and 64 had adjacent at the other end beam. These limp collecting constitute intermediate boxes and they communicate between them by one connector 66. Thus, the exchanger of heat of figure 7 can be crossed by a fluid which penetrates in the collecting box 30, circulate in a first tablecloth of the beam for rejoin- DRE the collecting box 62 and to then gain the collecting box 64. From there, the fluid gains the box of exit 32 while passing by the other tablecloth. Of course, it is possible to lay out in one and/or the other of limp collecting of the intermediate partitions to allow, in a way in oneself known, to make circulate fluid on one or more ways in the tablecloth correspon- dante. The exchanger of the

invention is appropriate particularly for the realization of condensers for apparatuses of air-conditioned tion, or with the realization of exchangers of heat intended to be traversed by a fluid under raised pressure, in particular by a gas of the carbon dioxide type, in exchangers of the eau/dioxyde type of carbon.

# Babel Fish Translation

Help

## In English:

Claims of FR2793013 Claims 1. Exchanger of heat brazed including/understanding a beam of flat tubes and guides undulated, as at least a collecting tubular wall box in which the ends of the tubes emerge, characterized in that the ends (24, 26) tubes (12; 56) twisted each one to 90 and are aligned in a direc- tion longitudinal (L1) so as to be received in the same longitudinal slit (38; 46) of the collecting box (30; 32). 2. Exchanger of heat according to claim 1, caracté- rized in what the ends (24, 26) tubes (12; 56) are in mutual contact. 3. Exchanger of heat according to one of claims 1 and 2, characterized in that the tubes (12; 56) include/understand each one several parallel interior channels (20). 4. Exchanger of heat according to one of claims 1 with 3, in which the tubes (12; 56) have a section delimited by two large sides (16) and two small sides (18), characterized in that the longitudinal slit (38; 46) of the collecting box (30; 32) a width presents appreciably equalize at the small sides (16) of the tubes. 5. Exchanger of heat according to one of claims 1 and 2, characterized in that the longitudinal slit (38; 46) is delimited between two parallel lips (40; 50) of the wall tubular (34; 36). 6. Exchanger of heat according to claim 5, caracté- rized in what two parallel lips (40; 50) are respectively defined by two turned over edges of the tubular wall (34; 36), so that the ends (24, 26) 1 1 Z {I2793013 tubes are in contact of the same internal face of the tubular wall. 7. Exchanger of heat according to one of claims 1 with 6, characterized in that the collecting box (30; 32; 60; 62) includes/understands two walls of end (42; 52) framing them aligned ends (24, 26) tubes. 8. Exchanger of heat according to one of claims 1 with 7, characterized in that it includes/understands a beam (10) with one only tablecloth formed of right tubes (12) and two limp collec- spaced trices (30, 32) in which emerge respecti- vement first ends (24) and second ends (26) of the tubes. 9. Exchanger of heat according to one of claims 1 with 7, characterized in that it includes/understands a beam (55) to two tablecloths

formed by tubes out of U (56) and two boxes collec- brought closer trices (30, 32) in which emerge respectively of the first ends (24) and the second ends (26) of the tubes. 10 Exchanger of heat according to one of claims 1 with 7, characterized in that it includes/understands a beam (61) to two tablecloths formed by right tubes (12) and four collecting boxes (30, 32, 60, 62) in which emerge the ends (24, 26) tubes, namely one limps of entry (30) and one box of exit (32) laid out adjacent at an end of the beam, and two intermediate boxes (62, 64) laid out adjacent at another end of the beam and communicating between them. 11 Exchanger of heat according to one of claims 1 with , characterized in that it is obtained by brazing of parts based on aluminium. 12 Exchanger of heat according to one of claims 1 with 11, characterized in that each limps collecting (30; 32; ; 62) is obtained by shaping of a band in a material based on aluminium, plated of an alloy of brazing. 13 Exchanger of heat according to one of claims 1 with 12, characterized in that it is carried out in the shape of a condenser for an installation of air-conditioning. Supplied from the esp@cenet database - Worldwide dated

START HERE
GO FURTHER
FEDERAL STUDENT AID

## Filling Out a FAFSA — 2007-2008

Based on answers to specific questions, we have determined that you are an "**independent**" student. Independent students are not required to answer questions about their parents.

You may want to answer the parental questions if:

- You are a health profession student (such as a medical or nursing student), or
- The school requires parental information from all students

| | |
|---|---|
| **Do you want to answer questions about the student's parents?** | Select |

PREVIOUS NEXT

NEED HELP? SAVE VIEW FAFSA SUMMARY EXIT

Site Last Updated: Tuesday, May 15, 2007